

**Engineers + Architects**

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October 1, 2009

Thomas J. Gawlik
President & CEO
ESI Environmental
5232 West 79th Street
Indianapolis, IN 46268

Re: Storm Water Retention at West 86th Street Facility
MNA Commission No: 2009109

Dear Mr. Gawlik:

This letter documents available and recommended storm water retention capacity and sufficient freeboard for ESI's West 86th Street water treatment facility.

Given

1. Site storm water retention should provide sufficient freeboard to contain that quantity of precipitation falling on the site in a 24 hour event with average recurrence interval of 25 years. Source: "SPCC Guidance for Regional Inspectors" Version 1.0, dated 11/28/2005, paragraph 4.2.4.
2. Precipitation depth for a 24 hour event with average recurrence interval of 25 years is 4.8 inches. Source: City of Indianapolis "Storm Water Design Manual" Table 202-2.
3. A one inch precipitation event accumulates 156,990 gallons of water on ESI's site. Source: Schneider Corporation survey, Sheet C103 dated 10/01/2009.
4. The largest tank on ESI's site that relies on the existing curb surrounding the perimeter of the site for secondary containment is 21,000 gallons. Source: ESI drawing G2.02 "Equipment and Tankage Locations" Revision 3, dated 03/29/2006.
5. Storage volume inside existing curb surrounding the perimeter of the site is 227,856 gallons. Source: Schneider Corporation survey, Sheet C103 dated 10/01/2009.
6. Storage volume in underground storm piping and structures is 43,393 gallons. Source: Schneider Corporation survey, Sheet C103 dated 10/01/2009.
7. Maximum treatment rate of ESI's API separator and DAF unit is 700 gallons per minute. Source: Tenco Hydro, Inc. specifications for this equipment dated December 1992 and ESI operating methodology.

Assumption

1. Only 55% of the maximum capacity of the API separator and DAF unit is used for treatment of storm water. Allows capacity for on-going plant operation.

Recommended Retention Capacity and Sufficient Freeboard

By Givens 1, 2, 3, and 4, the site should retain 774,552 gallons of water and oil. ($156,990 * 4.80 + 21,000 = 774,552$).

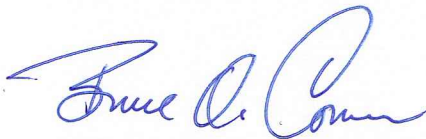
Available Retention Capacity

By Givens 5, 6, and 7 and Assumption 1, available retention capacity is 824,649 gallons ($227,856 + 42,393 + 700 * 0.55 * 1440 = 824,649$).

Conclusion

Our analysis indicates that available retention capacity exceeds recommended sufficient freeboard by 50,097 gallons.

Sincerely,
Mussett, Nicholas & Associates, Inc.



Bruce O. Conner, PE
President
Indiana License Number: PE60018422

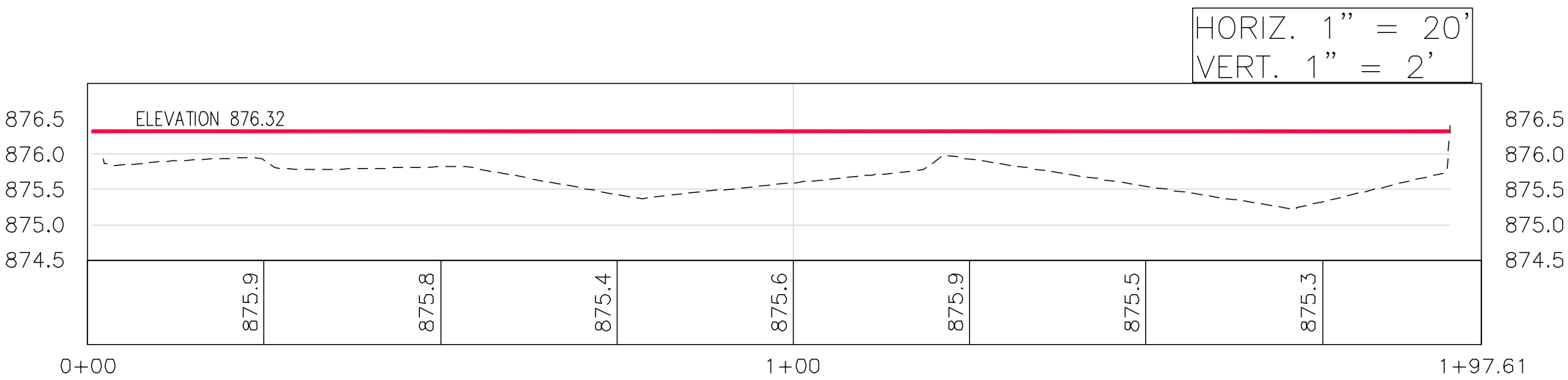


SUMMARY OF AVAILABLE STORAGE WITHIN STORMWATER INFRASTRUCTURE		
PIPE SIZE	PIPE LENGTHS	PIPE VOLUME (GALLONS)
12"	85	499
12"	50	294
12"	140	823
12"	60	353
12"	120	705
12"	105	617
12"	25	147
12"	30	176
12"	90	529
15"	120	429
18"	135	1,785
18"	105	1,388
18"	50	661
66"	141	25,061
12"	200	1,175
12"	154	905
12"	46	270
12"	105	617
SUBTOTAL	VOLUME IN PIPES	36,433
15	MANHOLE / STRUCTURE VOLUME	7,960
TOTAL	VOLUME IN STORMWATER INFRASTRUCTURE	44,393

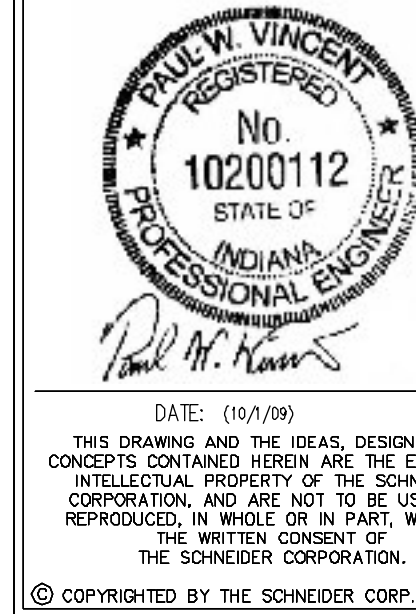
DESCRIPTION	RUNOFF COEFFICIENT (C)	RAINFALL INTENSITY (I)	AREA (A)	RUNOFF (ft/s) (Q)	RUNOFF (gpm) (Q)
PAVEMENT AREAS	0.85	1"hr	6.188 AC.	5.258 ft/s	2,360 gpm
UNIMPROVED AREAS	0.3	1"hr	1.905 AC.	0.5715 ft/s	256.5 gpm
SUMMARY / TOTAL				5.8296 ft/s	2,616.50
*ABOVE RUNOFF CALCULATIONS BASED ON "RATIONAL METHOD" DESCRIBED IN CITY OF INDIANAPOLIS STORMWATER SPECIFICATION MANUAL.					
*ASSUMED RUNOFF COEFFICIENTS: PAVED AREAS = 0.85, UNIMPROVED AREAS = 0.3, IN ACCORDANCE WITH CITY OF INDIANAPOLIS STORMWATER SPECIFICATION MANUAL.					
*RESULT IS 156,990 GALLONS PER HOUR DURING A 1" PER HOUR RAIN EVENT					

NOTE:

- EXISTING ON-SITE STORMWATER STORAGE IS THE SUM OF THE VOLUME IN THE STORMWATER INFRASTRUCTURE (44,393 - GALLONS) PLUS THE SURFACE STORMWATER STORAGE WITH NO WORK (227,856 - GALLONS). TOTAL = 272,249 GALLONS



REVISIONS:



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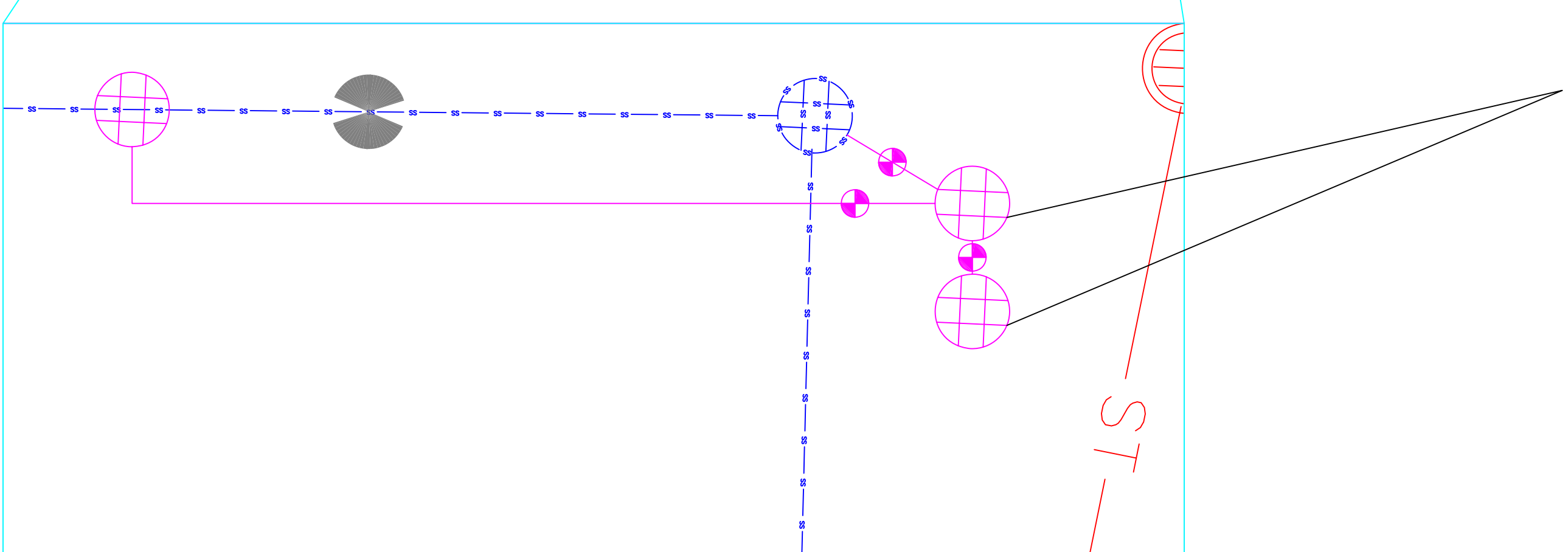
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NORTHWEST FACILITIES
STORMWATER CONDITIONS
INDIANAPOLIS, IN
EST ENVIRONMENTAL INC.
5232 WEST 79TH STREET
INDIANAPOLIS, IN 46268

DATE: 10/01/09 PROJECT NO.: 7617.001
DRAWN BY: KDK CHECKED BY: PWV
SHEET TITLE: EXISTING STORMWATER CONTAINMENT AREA
DRAWING FILES:
T:\7617\001\dwgs\C103.dwg
X-ref: T:\7617\001\dwgs\S02005-01.mxd
X-ref: T:\7617\001\dwgs\S02005-02.mxd

SHEET NO.: C103

SEWER STRUCTURES REMOVED FROM SERVICE VIA CEMENT FILLING



STORM AND SANITARY SEWERS

U G O

Stormwater Discharge

ESI's facility is completely paved and bermed to collect all stormwater, including any associated with industrial activities. The stormwater is collected in a captive storm sewer that places the stormwater into the facility's wastewater storage tanks. The storm water mixes the CWT wastewater and is processed through the treatment system. The water is discharged to the City of Indianapolis sewer system to the POTW. ESI has an industrial pretreatment permit #49503. No stormwater associated with industrial activity leaves the facility; therefore there is no requirement for a stormwater discharge permit.